
. . . from concept to acquisition
NAVAL WIRELESS NETWORKS SUMMIT
Presented by:
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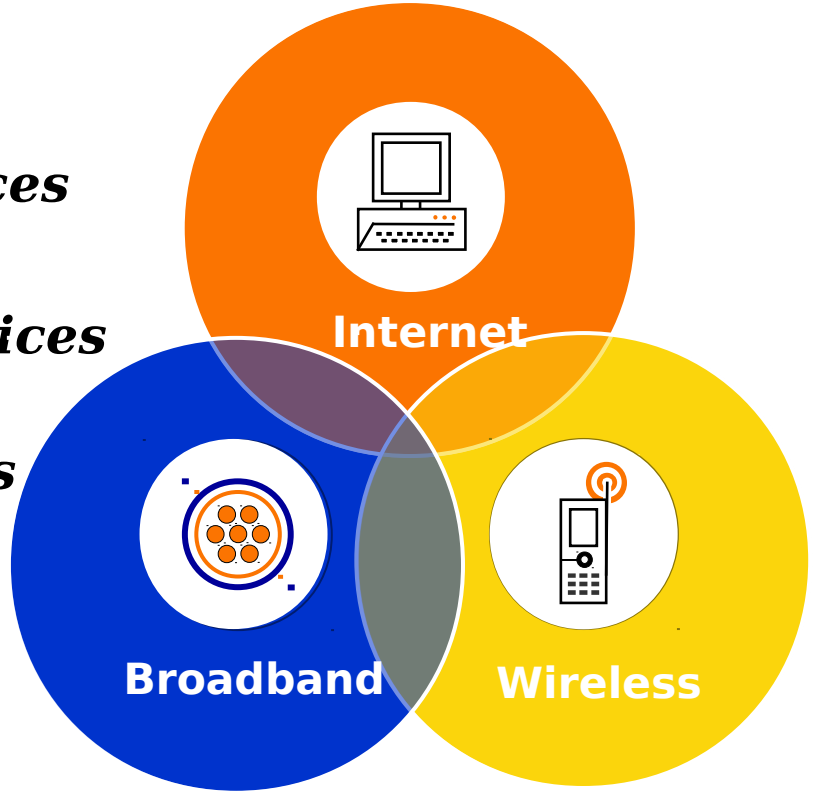
Motorola GCISS
Sponsored by: NETWARCOM and PEO Ships
Hosted by : SPAWAR AND PEO C4I

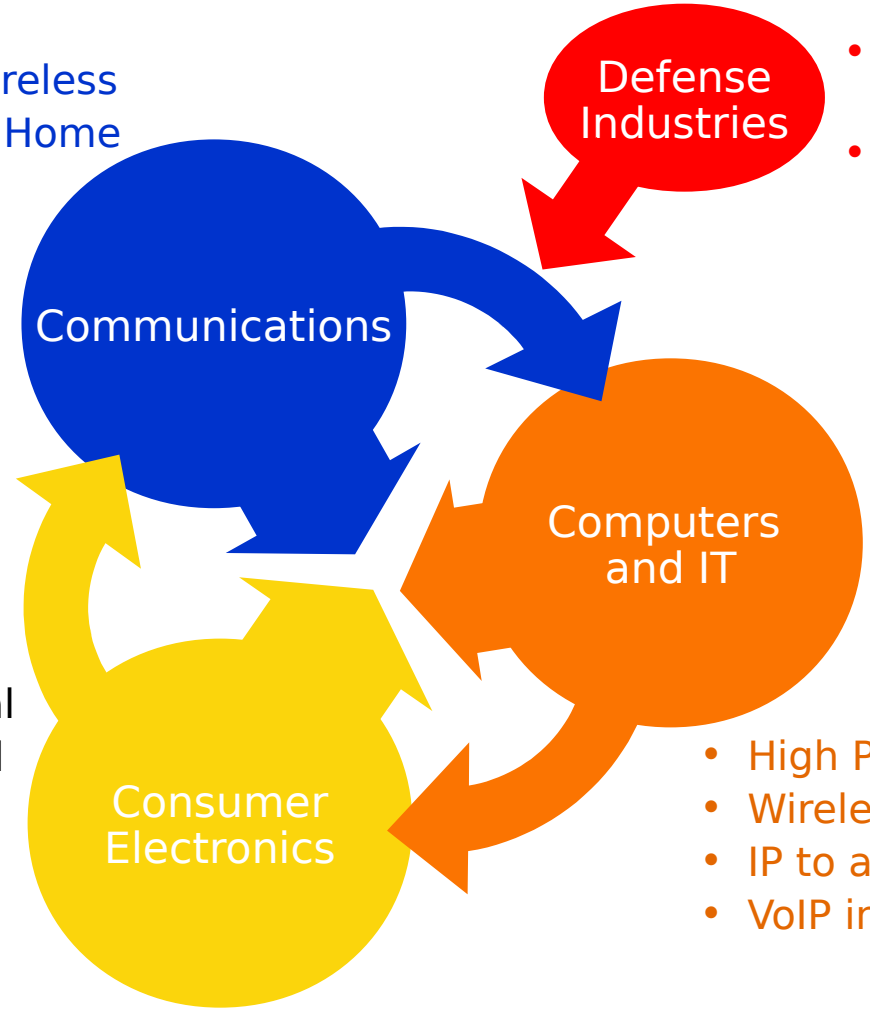
Data and Communications Convergence

- **Media**
  - Streaming video
  - Video on demand
  - Interactive video services
- **Telecommunication**
  - PSTN and cellular services
  - Video telephony
  - Wideband data services
- **Computer**
  - Internet access
  - Electronic mail
  - Mobile computing



The Morphing Technology Landscape

- WLAN
- Broadband Wireless
- Broadband to Home

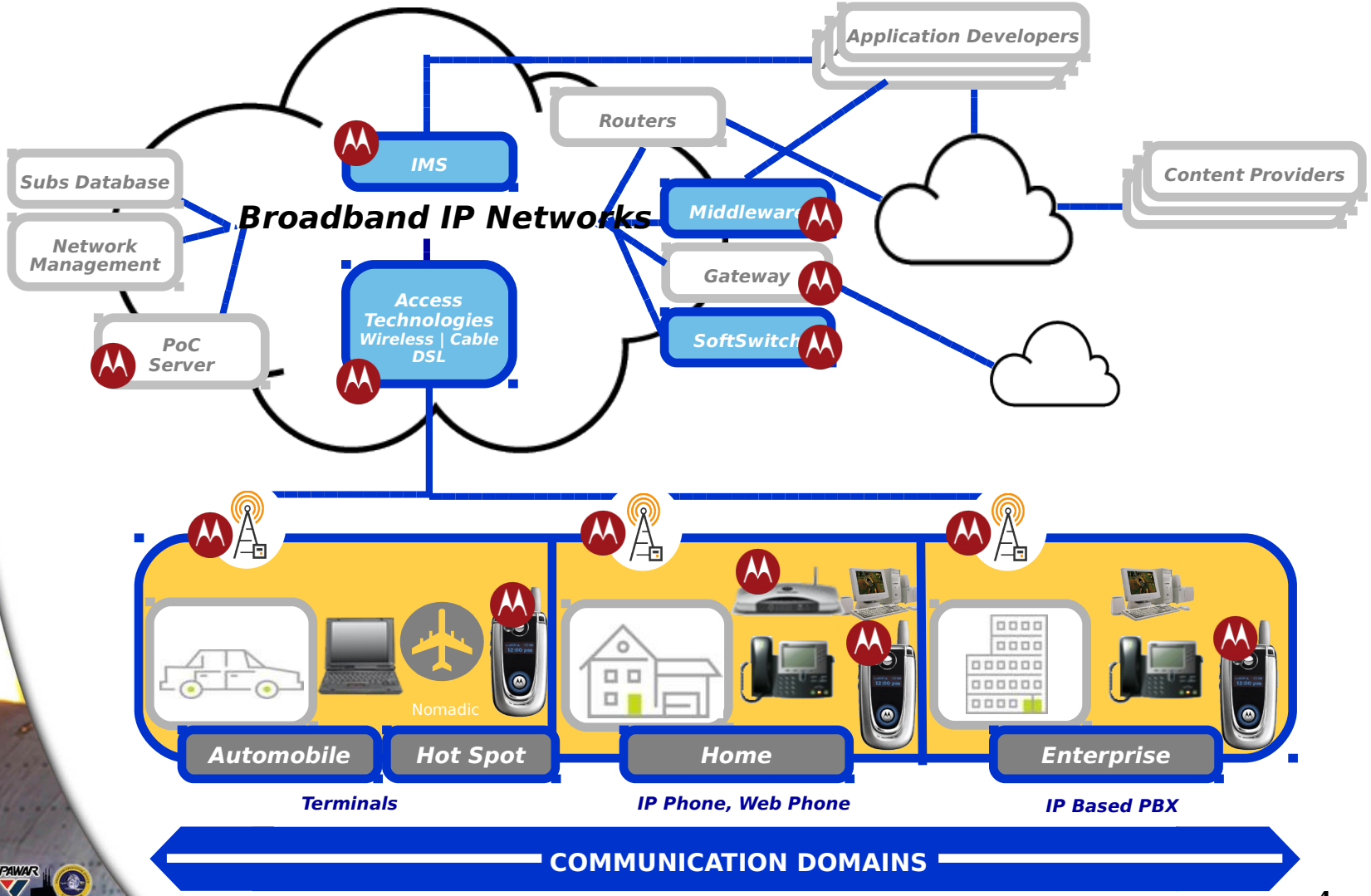


- Scalable Military Electronics
- Interoperable Communications

- Entertainment Moves to Digital
- Personal Digital Devices

- High Performance PCs
- Wireless IP
- IP to and in the Home
- VoIP in the Enterprise

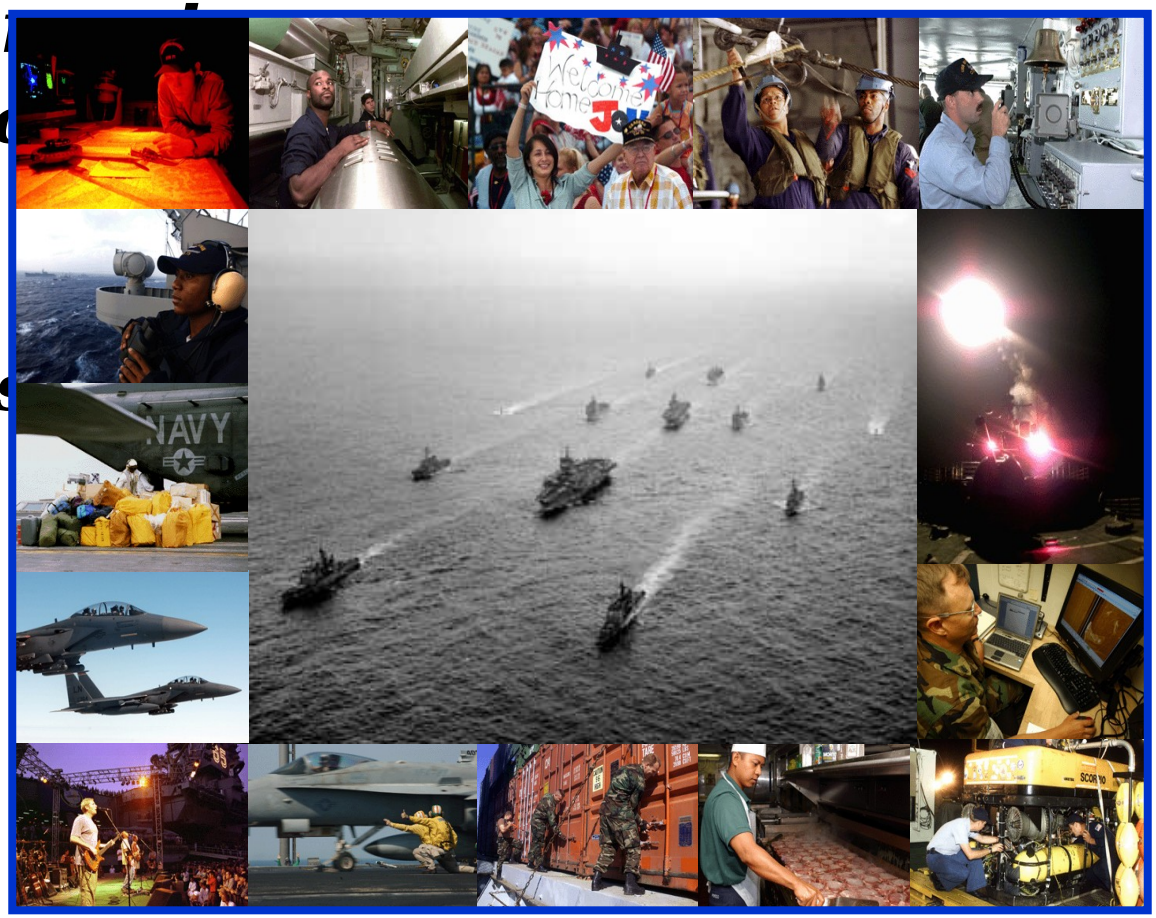
Converged Services Network Vision



Sometimes It's a Matter of Perspective

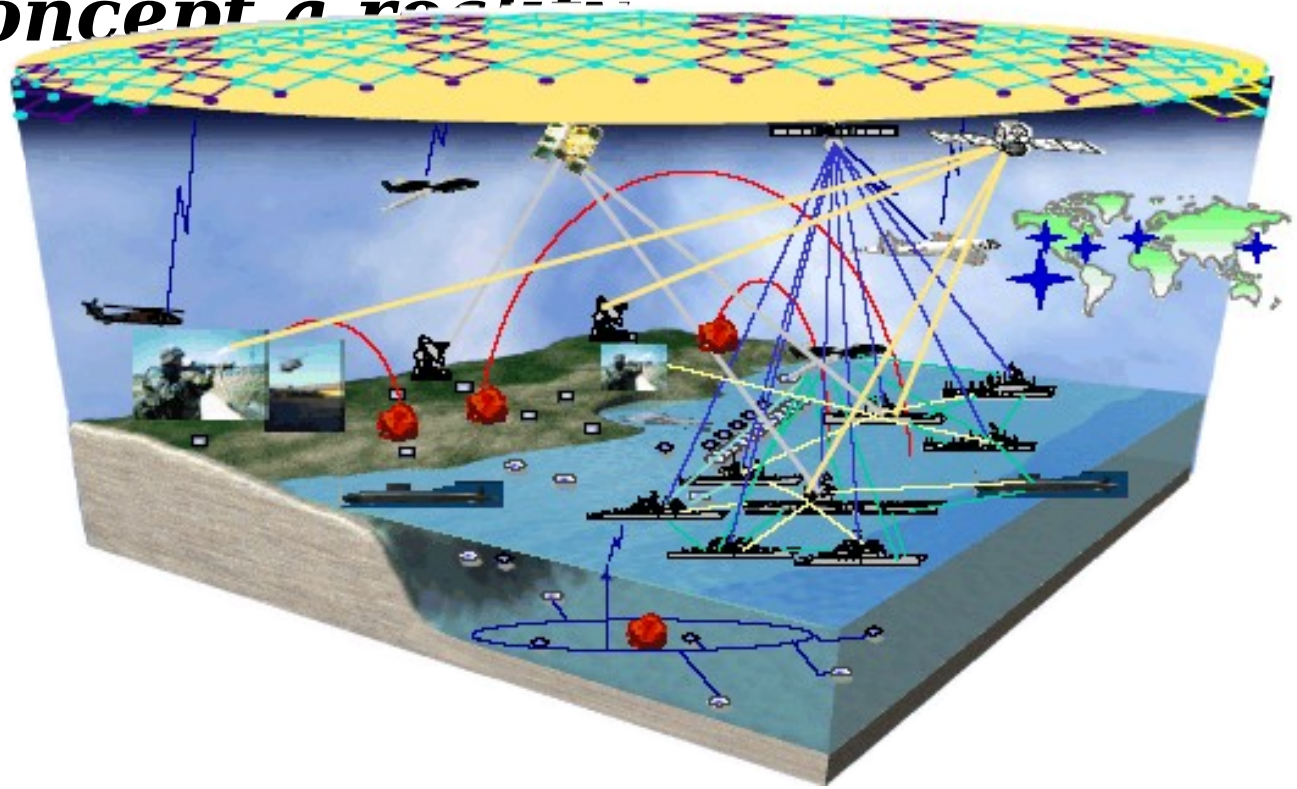
Naval operations is a slightly different environ

- ***Workplac***
- ***Home***
- ***Vehicle***
- ***Enterpris***



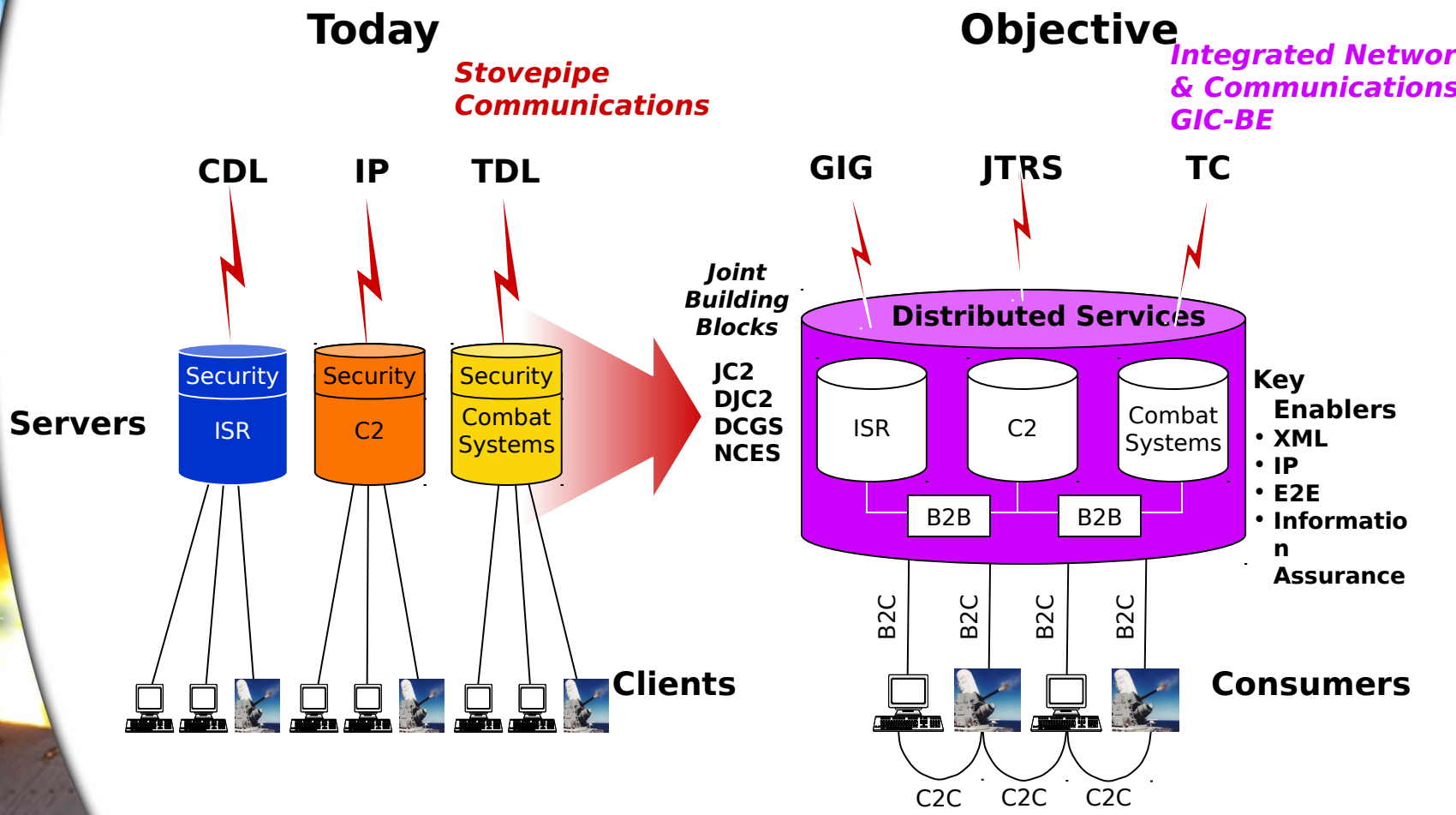
Navy Convergence - FORCEnet

The process of making the theory and concept a reality



You have developed your roadmap

Push to a Common Environment



B2B – Business to Business
B2C – Business to Consumer
C2C – Consumer to Consumer

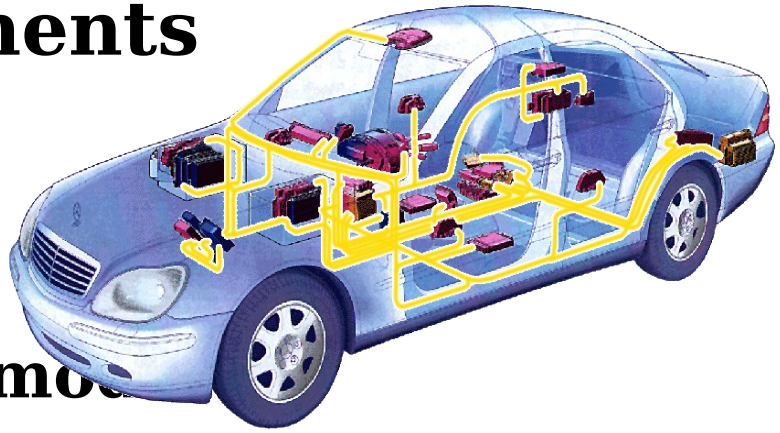
Commercial Convergence

- ***Integration of licensed, unlicensed and carrier operators***
  - ***Serious debate over management of future network***
  - ***Dependency on switched circuits for priority/assured service***
- ***Data is the largest consumer of bandwidth***
  - ***Voice will be handled via QoS***
- ***Standards based***
  - ***Problem is which one(s)***
- ***Globally diverse network infrastructures***
  - ***Analog, 2G, 2.5G, 2.75G, 3G***
  - ***In planning: 4G, 5G, Next generation networks***

Telematics – An Example of Convergence

Navy-like requirements

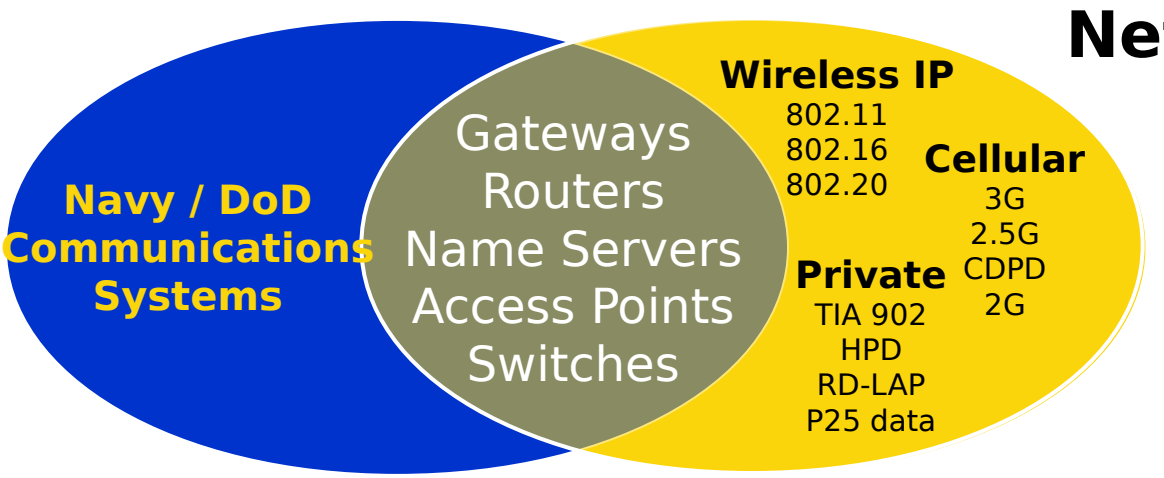
- **Zero start-up time**
- **High reliability**
- **Safety**
- **Fail-safe operation mo**
- **Harsh environment**
- **Sustainable/Supportable for 10+ years**

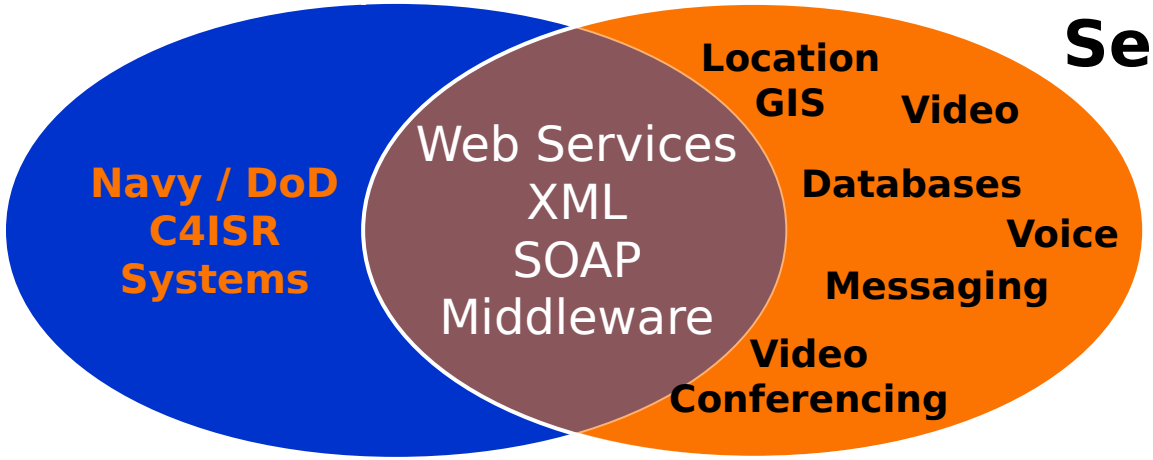


Features

- Communications
- Diagnostics
- Entertainment
- Sensor management
- Situation awareness
- Personal area netw
- Help desk / E911
- Speech recognition
- Standards based
- Navigation / GIS
- User customization
- Network aware

Service & Network Convergence





Device Convergence or Divergence

- *JTRS*
  - *Cluster 2*
  - *AMF*
  - *Cluster 5*
    - *Manpack*
    - *Portable*
    - *Small Form Fit*
- *SCA*

MBITR
Cluster 2 platform

- *Concern over waveform portability*
- *Lack of commercial interest in SCA*
- *Minimal user interface and feature*

COTS availability

Convergence Scorecard

IPv6 | EMP / EMI | LPI / LPD | DoD Waveform | Net-Centric | Environmental | Stds based | JTRS / SCA | Cost

DeviceDiversity | Multimedia | Feature Set | COTS Product | Useful Lifetime | Accessories | Content Mgmt | CognitiveRadio | Fee for Service

SPAWAR

HOLE	1	2	3	4	5	6	7	8	9	OUT		10	11	12	13	14	15	16	17	18	IN	TOT	HCP	NET
BLUE	528	393	527	381	336	169	372	194	517	3417		375	434	525	140	393	324	375	221	366	3153	6570		
WHITE	517	354	515	363	329	160	362	173	479	3254		363	419	513	136	373	306	360	214	346	3030	6284		
GOLD	474	253	444	301	322	148	310	152	405	2809		317	402	372	131	368	238	278	203	280	2589	5398		
HDCP																								
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PAR	5	4	5	4	4	3	4	3	5	37		4	4	5	3	4	4	4	3	4	35	72		

SPAWAR Convergence Course

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- ***http://www.motorola.com/networkoperators/***

Acronyms

#G	number generation wireless
2G	Second generation wireless
3G	Third generation
4G	Fourth generation
5G	Fifth generation
AMF	Airborne, Maritime, Fixed
APCO	Association of Public Safety Communications Officials
B2B	Business to Business
B2C	Business to Consumer
C2C	Consumer to Consumer
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance
CDL	Control Data Link
CDPD	Cellular Digital Packet Data
COTS	Commercial-off-the-shelf
DCGS	Distributed Common Ground Station
DJC2	Deployable Joint Command and Control
DoD	Department of Defense
DSL	Digital Subscriber Line
E2E	Enterprise to Enterprise
GIG	Global Information Grid
GIG-BE	GIG Bandwidth Expansion
GIS	Geographical Information Services
HDP	High Density Platform
IMS	IP Multimedia System
IP	Internet Protocol
ISR	Intelligence, Surveillance, Reconnaissance
IT	Information Technology
JC2	Joint Command and Control
JTRS	Joint Tactical Radio System
LAN	Local Area Network
MBITR	Multi-band Inter/Intra-Team Radio
NCES	Net-Centric Enterprise Services
P25	APCO 25
PBX	Private Branch Exchange
PC	Personal Computers
PoC	Push-to-talk over Cellular
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RD-LAP	Radio Data Link Access Protocol
SCA	Software Communications Architecture
SOAP	Simple Object Access Protocol
TC	Transformational Communications
TDL	Tactical Data Link
TIA	Telecommunications Industry Association
VoIP	Voice over IP
WLAN	Wireless LAN
XML	eXtensible Markup Language